ANALYSIS OF CT SCAN IMAGE TO PREDICT LUNG CANCER STAGES USING IMAGE PROCESSING TECHNIQUES

NASRIN BP

MES20MCA-2037

PRODUCT OWNER:MUHAMMED JABIR C

TABLE OF CONTENTS

1.INTRODUCTION

The prime purpose of this research is to utilize the principles of data mining and data science in the domain of patient data. Due to the abundance and vast variety of general patient data, it is often overlooked. This research focuses on the complete life-cycle of medical health data form acquiring it to extracting valuable information from it. Through data mining using digital solution the process of collection of data becomes less crucial and with the advancement of data storage technologies in terms of velocity and size makes the process of data processing swift. The anonymity is yet another milestone in medical health data which has to be dealt with using techniques of cryptography and well protected data warehouses. Clinical data holds secrets of nation’s healthcare. It can be used for comparisons and role models for the betterment of healthcare system. The adoption of smart digital solutions is being done to encourage individuals to proceed towards disease free world Keywords Clinical Data, Cryptography, Data Collection, Health Data, Knowledge acquisition, Health solution.

MODULES

ADMIN

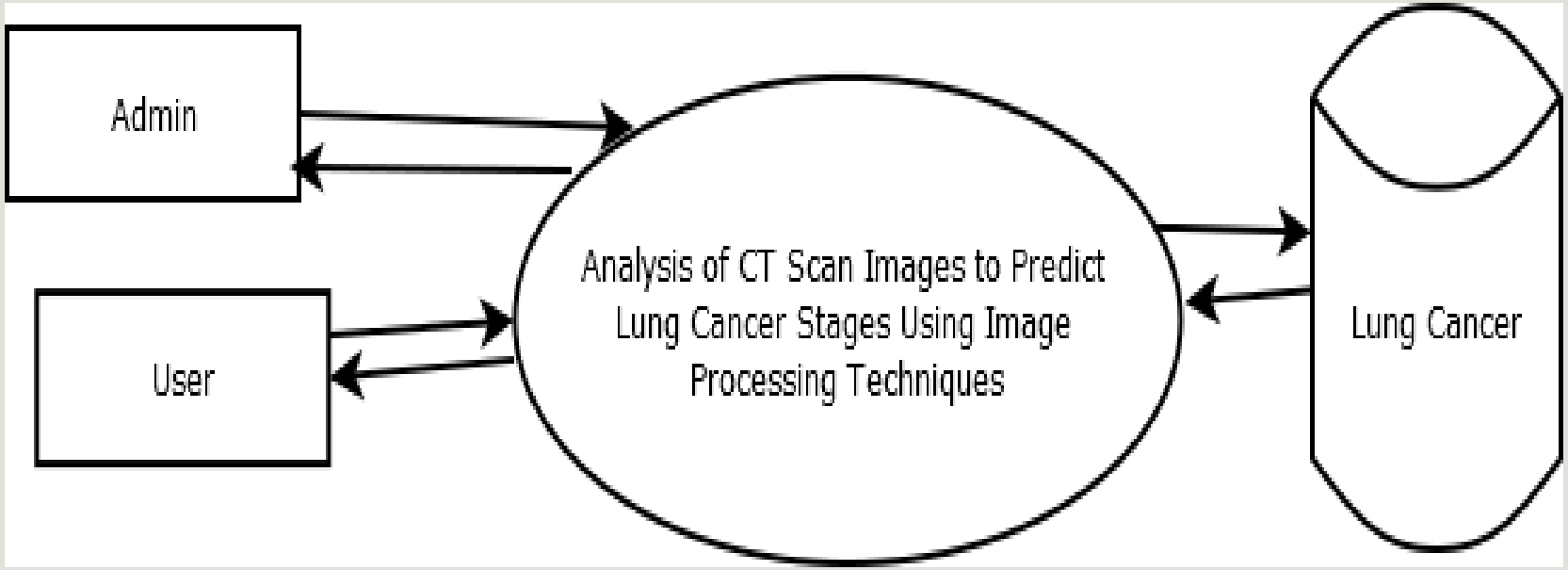
- **Login**
- **View User**
- **View Feedback**
- **Add And Manage Data Set**
- **Add And Manage Tips**

USER

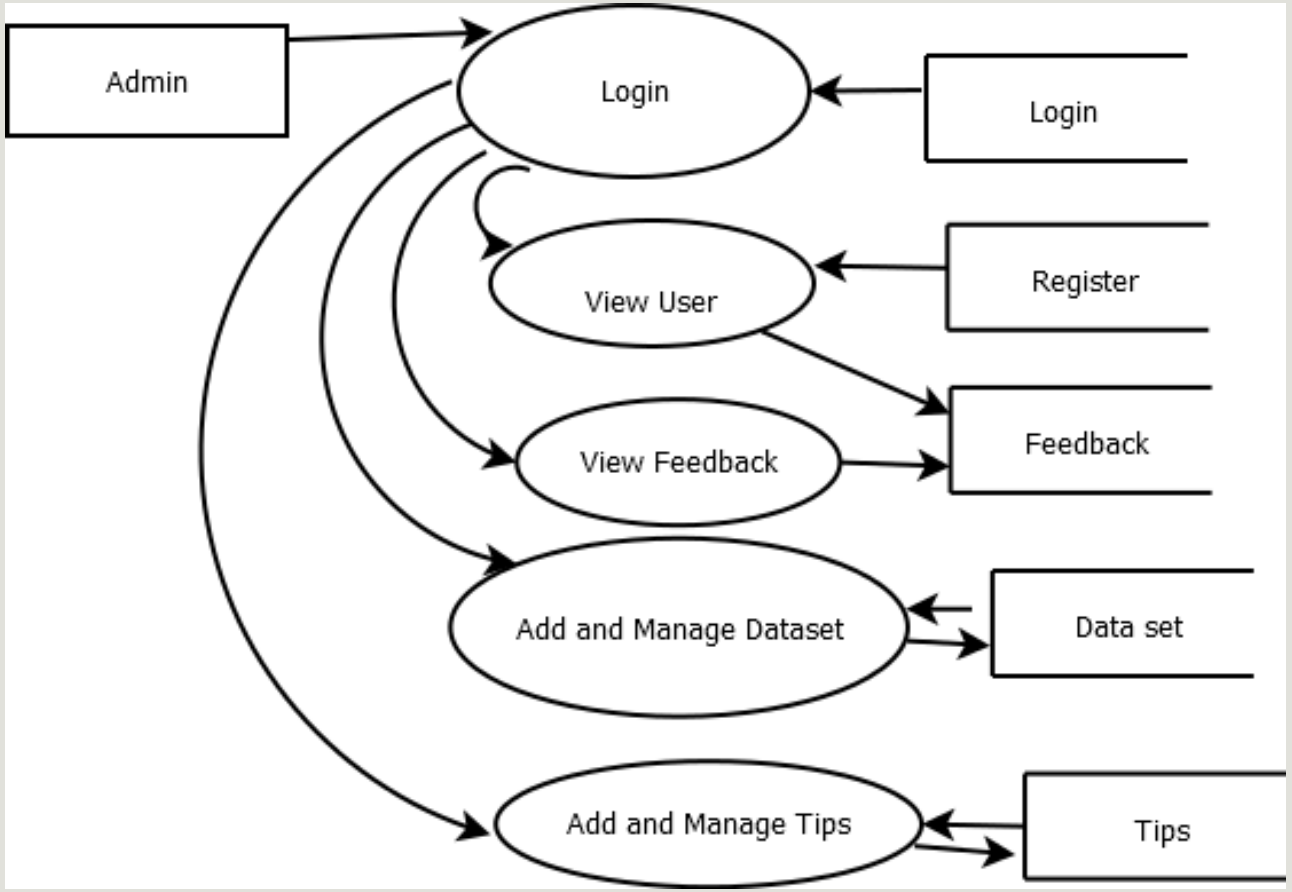
- **Registration**
- **Login**
- **Update profile**
- **View tips**
- **Upload image and view result**
- **View upload history**
- **Send feedback**

DATA FLOW DIAGRAM

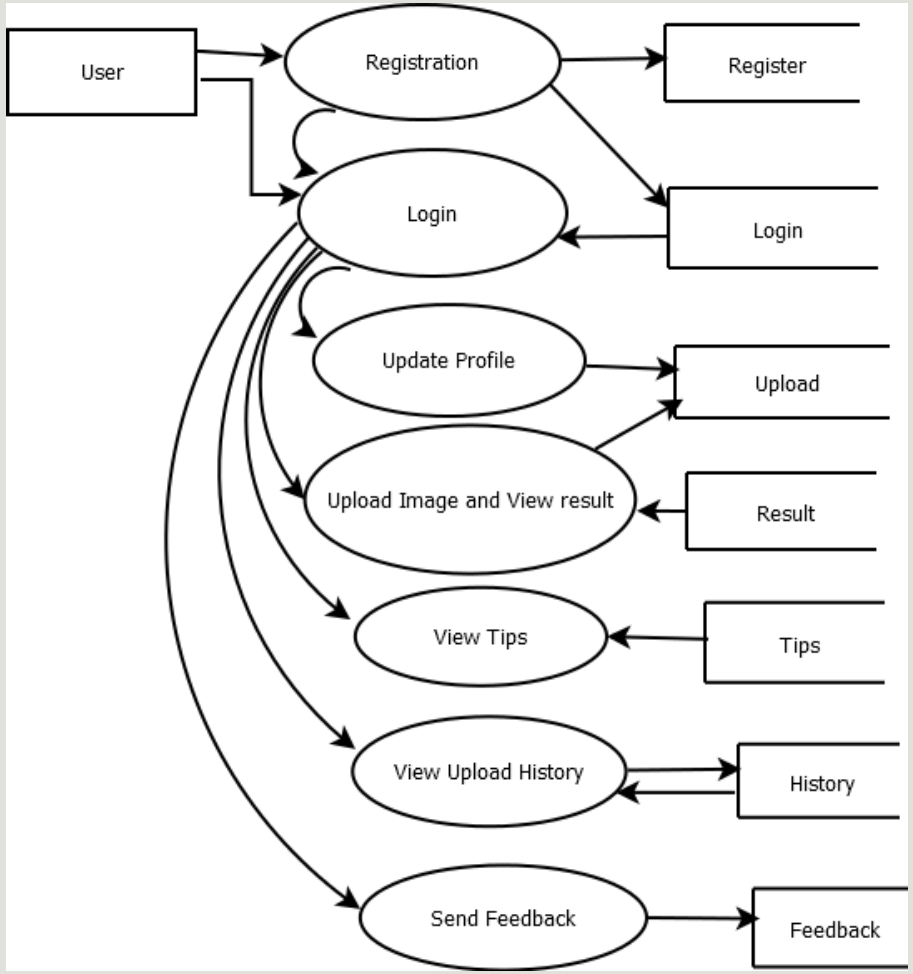
Level 0



Level 1.1


Admin
Login
Login
View User
Register
View Feedback
Feedback
Add and Manage Dataset
Data set
Add and Manage Tips
Tips

Level 1.2


User
Registration
Register
Login
Login
Update Profile
Upload
Upload Image and View result
Result
View Tips
Tips
View Upload History
History
Send Feedback
Feedback

DEVELOPING ENVIRONMENT

SOFTWARE REQUIREMENTS

- OPERATING SYSTEM: WINDOWS 10
- FRONT END: HTML, CSS, JAVASCRIPT
- BACK END: MySQL
- IDE: JetBrains PyCharm, Android studio
- TECHNOLOGY USED: PYTHON,JAVA
- FRAME WORK USED: Flask

PRODUCT BACKLOG

User Story ID	Priority <High/Medium/Low >	Size (Hours)	Sprint <#>	Status <Planned/In progress/completed	Released Date	Released Goal
1	Medium	2	1	Completed	08/01/2022	Table design
2	High	3		Completed	10/01/2022	Form design
3	High	5		Completed	10/01/2022	Basic coding
3	High	5	2	Planned		Creation of data set
4	Medium	5		Planned		Pre-processing and feature extraction
5	High	5	3	Planned		Training
6	Medium	5		Planned		Prediction
7	Medium	5	4	Planned		Testing data
8	High	5		Planned		Output generation

USER STORY

User Story ID	As a type of user	I want to perform some task	So that I can achieve some goal
1	Admin, User	Login	Login successful with correct username and password
2	Admin	Add tips	Added tips
3	User	Registration	Signup and Login
4	Admin	View feedback	View feedback from user
5	Admin	Add and manage data set	Add and manage images Normal and lung cancer images
6	User	Update profile	Update profile
7	User	View tips	View tips from admin
8	User	Upload image and view result	Upload image and view result (prediction)
9	User	View upload history	View previous history of uploads
10	User	Send feedback	Send feedback to admin

PROJECT PLAN

User Story ID	Task Name	Start Date	End Date	Days	status
1	Sprint 1	27-12-2021	27-12-2021	4	Completed
2		28-12-2021	28-12-2021		Completed
3	Sprint 2	29-12-2021	29-12-2021	4	Planned
4		15-01-2022	16-01-2022		Planned
5	Sprint 3	22-01-2022	22-01-2022	8	Planned
6		23-01-2022	22-01-2022		Planned
7	Sprint 4	05-02-2022	06-02-2022	4	Planned
8		12-02-2022	12-02-2022		Planned

SPRINT PLAN

Backlog Item	Status & Completion date	Original Estimate in hours	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12
User Story#1,2			Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours
Table design	27/12/2021	5	5	0	0	0	0	0	0	0	0	0	0	0
Form design	28/12/2021	5	0	5	0	0	0	0	0	0	0	0	0	0
User Story #3,4														
Basic coding and dataset creation	23/01/2022	10	0	0	5	5	0	0	0	0	0	0	0	0
User Story #5,6														
Detection (Lung cancer or not)	29/01/2022	20	0	0	0	0	5	5	4	4	2	0	0	0
User Story #7,8														
Testing and output	12/02/2022	10	0	0	0	0	0	0	0	0	0	5	3	2
Total		50	5	5	5	5	5	5	4	4	2	5	3	2

SPRINT ACTUAL

Backlog Item	Status & Completion date	Original Estimate in hours	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12
User Story#1,2			Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours
Table design	27/12/2021	5	5	0	0	0	0	0	0	0	0	0	0	0
Form design	28/12/2021	5	0	5	0	0	0	0	0	0	0	0	0	0
User Story #3,4														
Basic coding and dataset creation	23/01/2022													
User Story #5,6														
Detection (Lung cancer or not)	29/01/2022													
User Story #7,8														
Testing and output	12/02/2022													
Total		50	5	5										

THANK YOU